Practice Questions - Term I

Date: 20/11/2021

Subject: Mathematics

Topic : Pair of Linear Equations in
Two Variables

Class: X

1. Consider two equations in the variables **x** and **y** written in the standard form:
    $5x + 6y + 4 = 0 \ and$
    $10x + 12y + 7 = 0$
    What is the nature of these two lines?

    A. Coincident

    B. Intersecting

    C. Parallel

    D. Coincident or parallel

2. The number of solutions of the given pair of linear equations $3x - 9y = 10$
    and $9x - 27y = 30$ is:

    A. Infinite

    B. One

    C. Two

    D. Zero

3. If the lines given by 3x + 2ky = 2 and 3x + 5y = 1 are parallel, then the value
    of 'k' is.

    A. $\frac{15}{4}$

    B. $\frac{4}{15}$

    C. $\frac{3}{4}$

    D. $\frac{4}{3}$

4. One equation of a pair of dependent linear equations is $x + y = 30$. The second equation can be

   A. $4x + 5y = 150$

   B. $5x + 5y = 150$

   C. $5x + 5y = 15$

   D. $4x + 5y = 150$

5. For what value of k, will the following system of equations have infinitely many solutions?
   $2x + 3y = 4, (k + 2)x + 6y = 3k + 2$

   A. k = 2

   B. k = 3

   C. k = 4

   D. k = 5

6. Determine the value of k for which the given system of equations has a unique solution:
   $x - ky = 2, 3x + 2y = -5$

   A. The given system of equations will have unique solution for all real values of k other than $-\frac{2}{3}$

   B. The given system of equations will have unique solution for all real values of k other than $\frac{2}{3}$

   C. The given system of equations will have unique solution for all real values of k other than $\frac{5}{2}$

   D. The given system of equations will have unique solution for all real values of k other than $\frac{2}{9}$

7. What is the solution of the pair of linear equations: $2x - 3y = 2, \ x + 2y = 8$?

   A. $x = 2 \ and \ y = 4$

   B. $x = 4 \ and \ y = 2$

   C. $x = 4 \ and \ y = 4$

   D. $x = 2 \ and \ y = 2$

8. The age of the father is twice the sum of the ages of his two children. After 20 years, his age will be equal to the sum of the ages of his children. Find the age of the father.

   A. 45 years

   B. 50 years

   C. 40 years

   D. 30 years

9. What is the solution of the pair of linear equations $x + y = 18$ and $x - 2y = 0$?

   A. $x = 12 \ \& \ y = 6$

   B. $x = 6 \ \& \ y = 12$

   C. $x = 11 \ \& \ y = 7$

   D. $x = 7 \ \& \ y = 11$

10.

What is the solution of the pair of linear equations $3x - 5y = 4$, $9x = 2y + 7$?
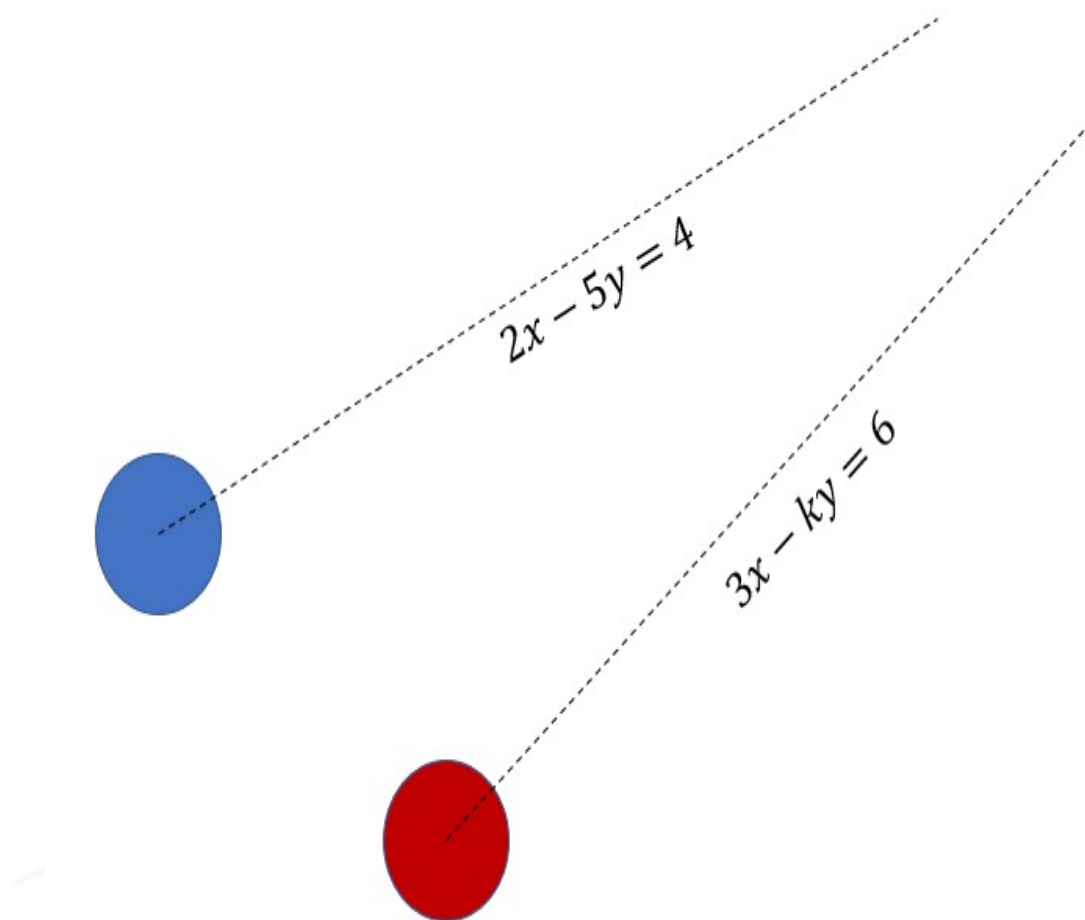
A. $x = \frac{9}{13}, y = \frac{-5}{13}$

B. $x = \frac{13}{9}, y = \frac{-13}{5}$

C. $x = \frac{-9}{13}, y = \frac{-5}{13}$

D. $x = \frac{9}{13}, y = \frac{5}{13}$

11. The given figure shows the path of two balls.
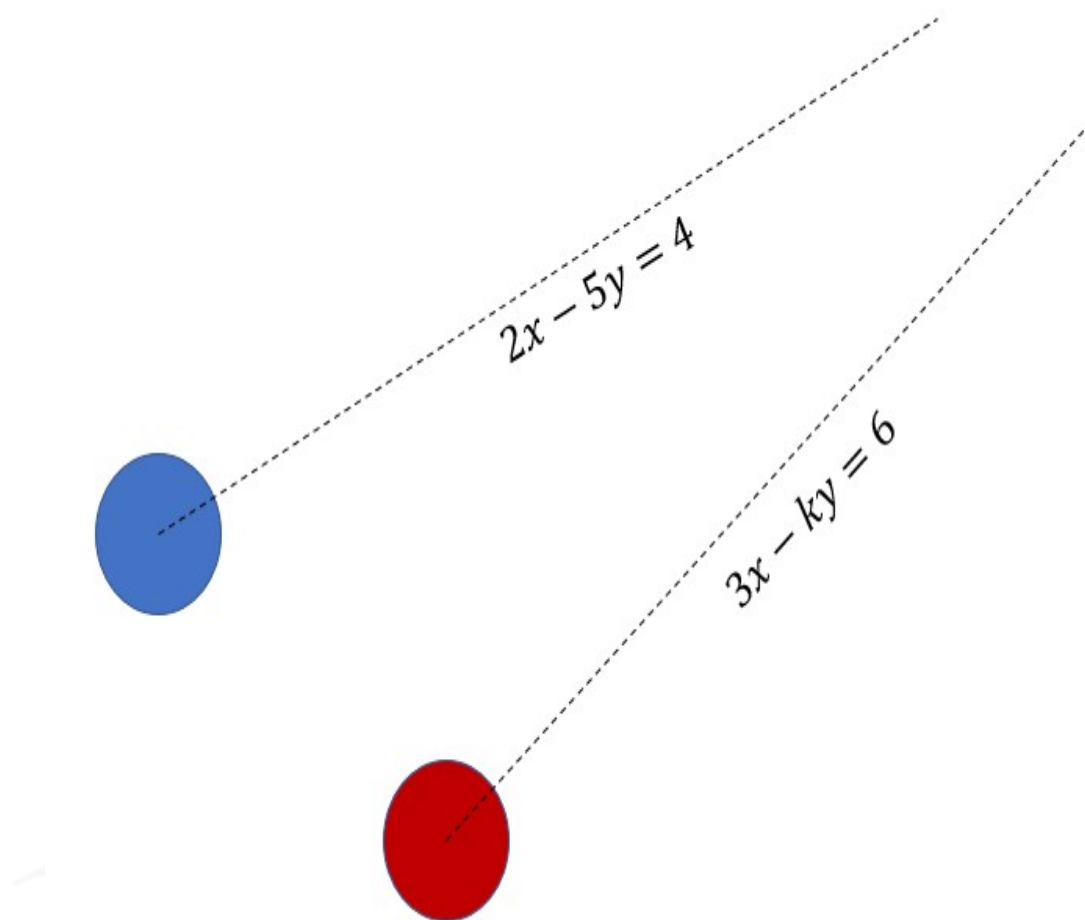

If path followed by the blue ball and the red ball is 2x-5y=4, and 3x-ky=6 respectively.

Determine the value of 'k' for which both the balls collide.

A. The balls will collide for all the real value of k except $\frac{15}{2}$

B. The balls will collide for all the real value of k except $\frac{2}{15}$

C. The balls will collide for all the values of k

D. The ball will collide at k = $\frac{15}{2}$

12. The given figure shows the path of two balls.
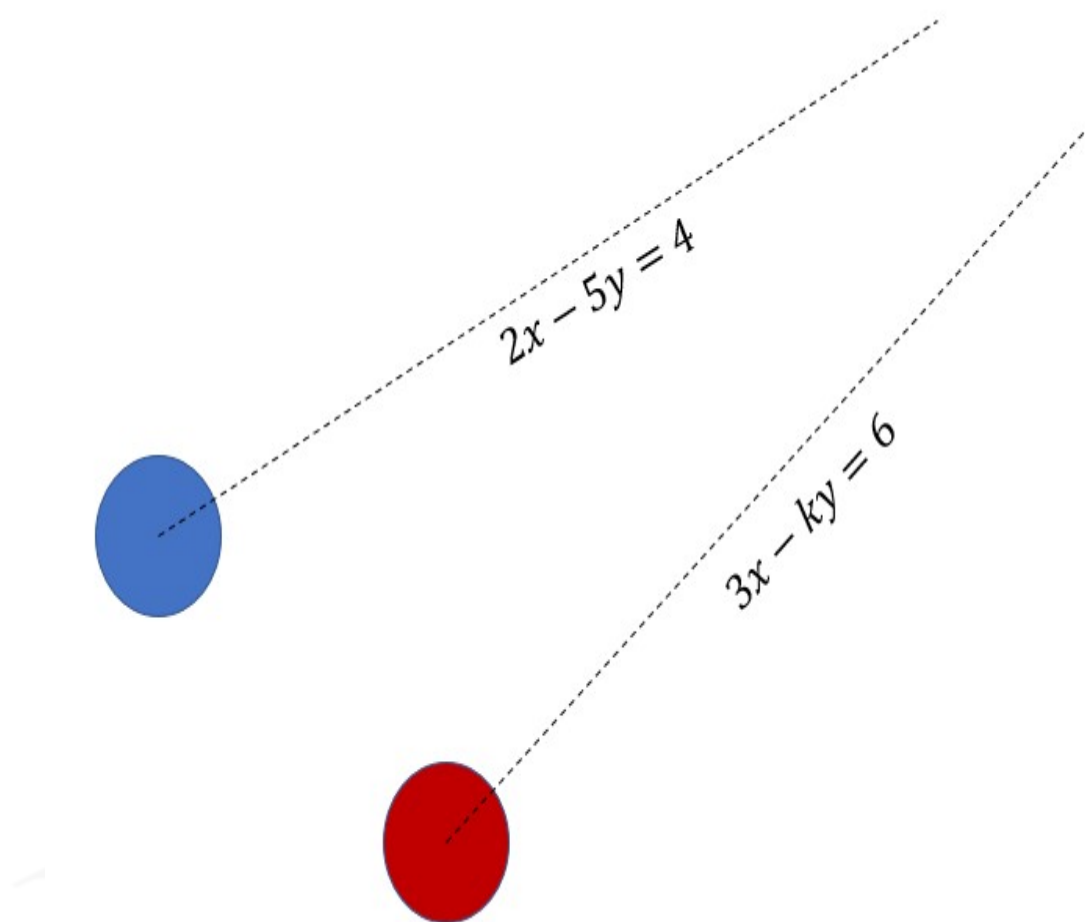

If path followed by the blue ball and the red ball is 2x-5y=4, and 3x-ky=6 respectively.

Determine the value of 'k' for which the path of the balls coincides.

A. $k = \frac{-2}{15}$

B. $k = \frac{-15}{2}$

C. $k = \frac{2}{15}$

D. $k = \frac{15}{2}$

13. The given figure shows the path of two balls.

$2x - 5y = 4$

$3x - ky = 6$

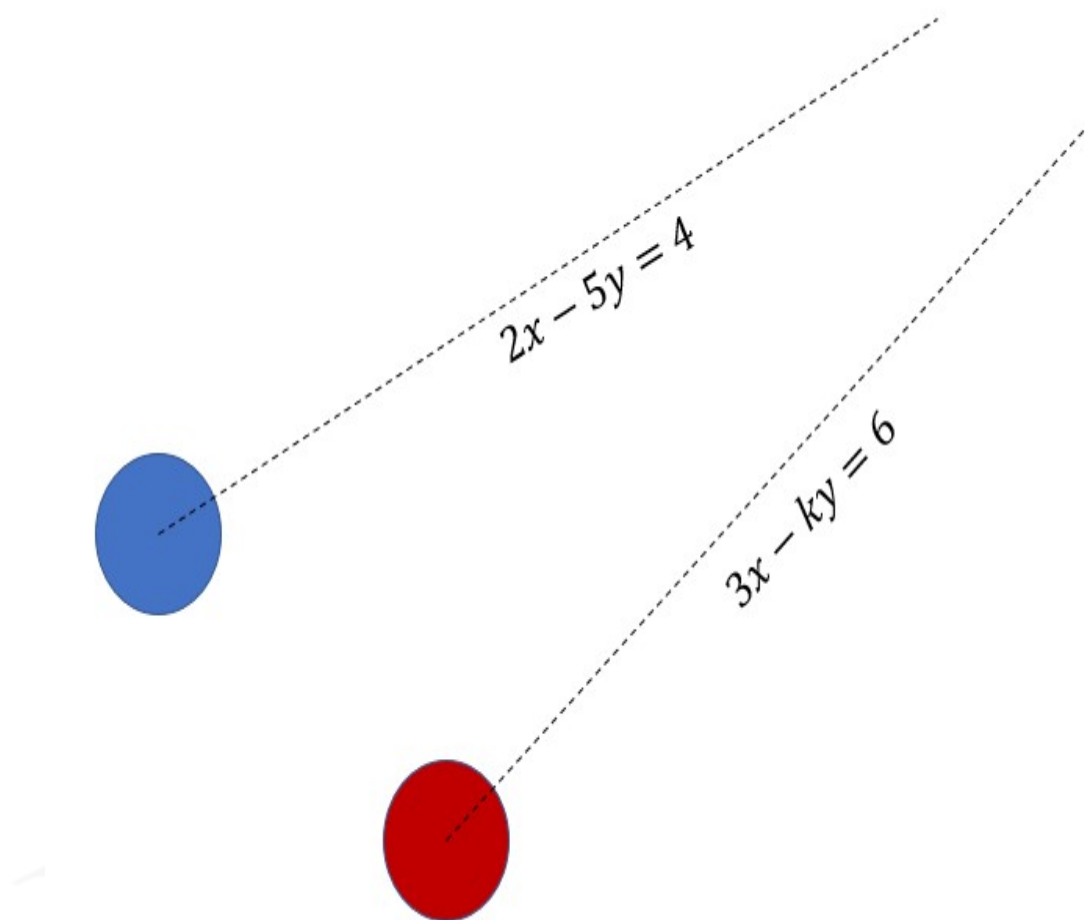If path followed by the blue ball and the red ball is 2x-5y=4, and 3x-ky=6 respectively.

Determine the value of 'k' for which the path of the balls is parallel.

A. $k = \frac{2}{15}$

B. $k = \frac{15}{2}$

C. It is not possible for the balls to have parallel path

D. $k = \frac{-15}{2}$

14. The given figure shows the path of two balls.

$$2x - 5y = 4$$

$$3x - ky = 6$$
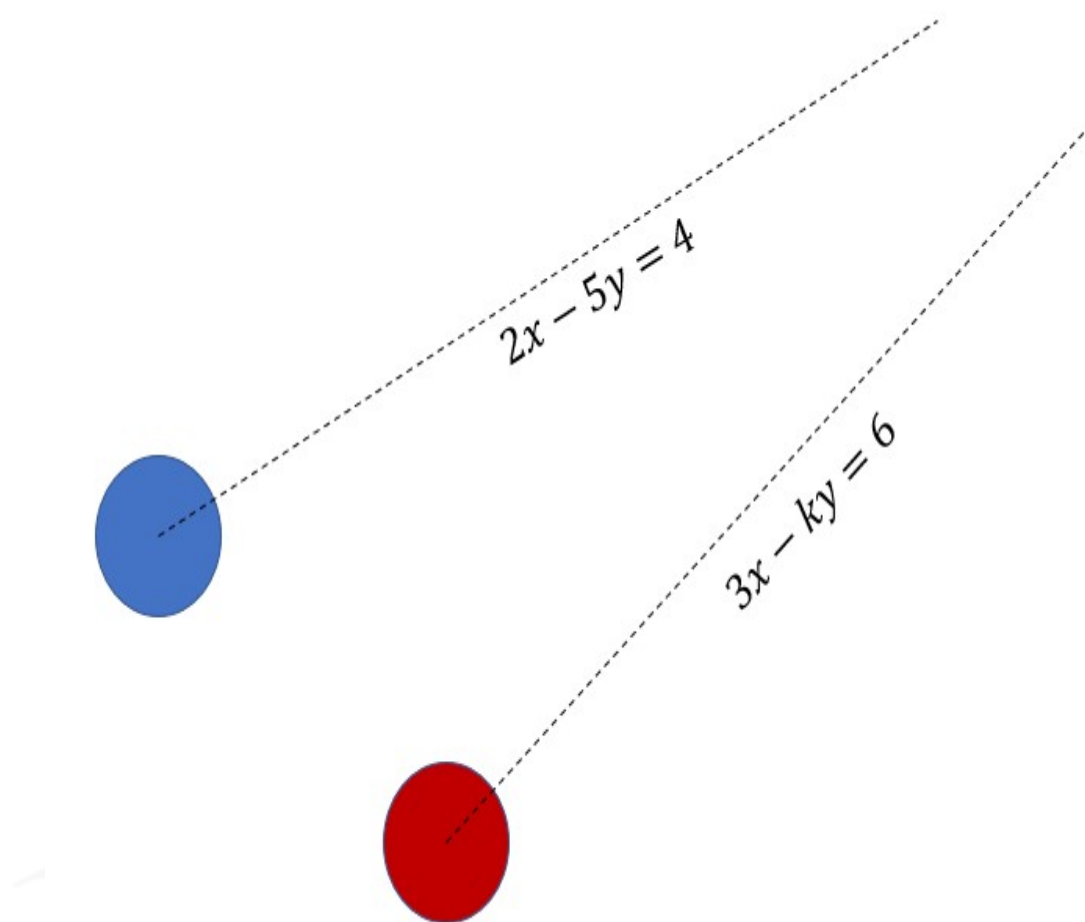
If path followed by the blue ball and the red ball is 2x-5y=4, and 3x-ky=6 respectively.

Determine the nature of linear equations of the given paths. Provided k=7.

   A. Coinciding

   B. Parallel

   C. Intersecting

   D. Parallel or coinciding

15. The given figure shows the path of two balls.

If path followed by the blue ball and the red ball is 2x-5y=4, and 3x-ky=6 respectively.

Determine the point of intersection of the path of the balls. Provided k=7.

    A. (0,2)

    B. (2,2)

    C. (0,0)

    D. (2,0)

16. If $3x - 4y = 1$ and $5x - 6y = 7$, then $x + y =$ ___.

    A. 16

    B. 20

    C. 18

    D. 19

17. Six years hence, Rahul's age will be three times his son's age and three years ago, he was nine times as old as his son. Rahul's present age is:

    A. 28 years

    B. 30 years

    C. 32 years

    D. 34 years

18. 54 is divided into two parts such that sum of 10 times the first part and 22 times the second part is 780. What is the bigger part?

    A. 34

    B. 32

    C. 30

    D. 24

19.

Find the value of k for which each of the following systems of equations has no solution:

$kx + 3y = 3, 12x + ky = 6.$

    A.   k = 6

    B.   k = -6

    C.   k = -3

    D.   k = 3

20.   5 chairs and 4 tables together cost Rs.5600,while 4 chairs and 3 tables together cost Rs.4340.Find the cost of a chair and that of a table respectively.

    A.   700, 560

    B.   700, 700

    C.   560, 560

    D.   560,700